

CLAIMS:

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1. A method for effecting bi-directional IR data communication between an object transceiver and a reader, the method comprising the following steps carried out by the object transceiver:

5 (One) transmitting successive data packets to the reader,  
(Two) upon termination of a transmission of each of said data packets, opening a time window for receiving a transmission from the reader.

2. The method according to Claim 1, wherein:  
10 the object transceiver is one of a plurality of object transceivers each worn by a person to whom a short message is to be transmitted and each having a respective unique ID and being able to effect autonomous transmission to the reader, and

in step (a) each object transceiver transmits for a negligible fraction of its duty cycle thereby reducing a likelihood that two or more object transceivers will try to transmit simultaneously.

3. The method according to Claim 1, wherein:  
the object transceiver is one of a plurality of object transceivers each worn by a person to whom a short message is to be transmitted and each having  
20 a respective unique ID and being able to effect autonomous transmission to the reader, and

in step (a) each object transceiver has a randomly variable duty cycle thereby reducing a likelihood that two or more object transceivers will try to transmit simultaneously.

25 4. A method for use with a data communications network comprising a server connected to a plurality of readers in order to send a message using IR data communication to a portable object transceiver operating according to any one of the preceding claims, said method comprising the following steps carried out by at least one of said readers:

- a) awaiting receipt of a transmission from said portable object transceiver of a data packet, and
- b) during the time window opened thereby, sending the message to the portable object transceiver from the respective reader in communication with the portable object transceiver.

5           5.       The method according to Claim 4, wherein the message is sent via the server and there are further included the step of:

- c) locating the respective reader in communication with the portable object transceiver, and
- 10       d) sending the message from the server to the respective reader for onward transmission to the portable object transceiver.

          6.       An object transceiver adapted for bi-directional IR data communication with a reader, the object transceiver comprising:

          a transmitter for transmitting successive data packets to the reader, and  
15       a timer responsive to termination of a transmission of each of said data packets, for opening a time window for receiving a transmission from the reader.

          7.       The object transceiver according to Claim 6, including a micro-controller for controlling the transmitter to transmit for a negligible fraction of a  
20       duty cycle thereof, thereby reducing a likelihood that two or more object transceivers will try to transmit simultaneously.

          8.       The object transceiver according to Claim 6, including a micro-controller for randomly varying a duty cycle of the transmitter thereby reducing  
25       a likelihood that two or more object transceivers will try to transmit simultaneously.

          9.       A reader for sending a message using IR data communication to a portable object transceiver, said reader comprising:

          a receiver for receiving a transmission of a data packet from the portable object transceiver, and

a transmitter for sending the message to the portable object transceiver during a narrow time window opened thereby.

10. A system comprising a server connected to a plurality of readers for sending a message using IR data communication to a portable object transceiver, wherein the server is adapted to:

(One) locate a respective one of said readers in communication with the portable object transceiver, and

(Two) send the message from the server to the respective reader for onward transmission to the portable object transceiver during a narrow time window opened thereby.

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